

REMARKS

I. Introduction

With the cancellation herein without prejudice of claim 11, claims 9, 10, and 12 to 17 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicant expresses appreciation for the acknowledgment of the claim for foreign priority and the indication that all of the certified copies of the priority documents have been received.

II. Rejection of Claims 9, 10 and 12 to 17 Under 35 U.S.C. § 102(b)

Claims 9, 10 and 12 to 17 were rejected under 35 U.S.C. § 102(b) as anticipated by PCT International Application Publication No. 01/71333 ("Stahl et al."), referring to U.S. Patent Application Publication No. 2003/0154764.¹ It is respectfully submitted that Stahl et al. does not anticipate these claims for at least the following reasons.

Claim 9 relates to a sensor element for determining a property of a measuring gas, including: a solid electrolyte; a diffusion barrier; at least one electrode applied on the solid electrolyte and being in contact with the measuring gas via a diffusion path in which the diffusion barrier is situated; and an arrangement, provided in a region of a side of the diffusion barrier facing away from the at least one electrode, for reducing a diffusion cross section in the region of the side of the diffusion barrier facing away from the at least one electrode.

As an initial matter, claim 9 has been amended without prejudice to recite that **the arrangement is in physical contact with the diffusion barrier** and to include the features of claim 11, i.e., that the arrangement at least one of has a smaller pore proportion than the diffusion barrier and is gas-impermeable.

Stahl et al. describes a sensor element including solid electrolyte layers (11a-f), inner and outer pump electrodes (22, 20), a measurement electrode (21), a reference electrode (23), a gas inlet opening (17), a porous diffusion barrier (12), a coarse-pore catalytically active region (14) of the diffusion barrier, a measured gas space (13) and an air reference conduit (15). However, **Stahl et al. does not**

¹ U.S. Patent Application Publication No. 2003/0154764 does not constitute prior art against the present application.

disclose, or even suggest, a sensor element including an arrangement, provided in a region of a side of the diffusion barrier facing away from the at least one electrode, for reducing a diffusion cross section in the region of the side of the diffusion barrier facing away from the at least one electrode.

Contrary to the contentions appearing on page 3, line 2 to 7 of the Office Action, coarse-pore region (14a) of Figure 2 of Stahl et al. (II.), which the Office Action considers to constitute an arrangement as recited above, does not reduce a diffusion cross section on a side of the porous diffusion barrier (12) facing away from the measurement electrode (21). **As indicated in paragraph [0006] of Stahl et al. (II.), the fine-pore region of porous diffusion barrier (12) constitutes the actual diffusion resistance of the diffusion barrier (12). In addition, as indicated in paragraph [0007] of Stahl et al. (II.), filling the entire region between gas inlet opening (17) and diffusion barrier (12) with coarse-pore catalytically active material (14a), as shown in Figure 2, causes no appreciable increase in diffusion resistance. Therefore, the pore volume of coarse-pore region (14a) is inherently much greater than that of the fine-pore region of the diffusion barrier (12), so the coarse-pore region (14a) does not reduce a diffusion cross section on the side of diffusion barrier (12) opposite to measurement electrode (21), but increases the diffusion cross section.** Accordingly, it is respectfully submitted that Stahl et al. does not anticipate claim 9 for at least these reasons.

Regarding claims 10 and 12 to 17, which ultimately depend from claim 9 and therefore include all of the features of claim 9, it is respectfully submitted that Stahl et al. does not anticipate these dependent claims for at least the reasons set forth above.

In view of the foregoing, withdrawal of this rejection is respectfully requested.

III. Rejection of Claims 9 to 11 Under 35 U.S.C. § 102(b)

Claims 9 to 11 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,355,152 ("Kato et al."). It is respectfully submitted that Kato et al. does not anticipate these claims for at least the following reasons.

Kato et al. does not disclose, or even suggest, the feature of claim 9 that the arrangement is in physical contact with the diffusion barrier. **As is apparent from Figures 25A, 25B and 26 of Kato et al., first diffusion rate determining section (26) of sensor element (14), which includes a vertically extending slit**

(144), and which the Office Action considers to constitute an arrangement as recited above, is not in physical contact with second diffusion rate determining section (28), which includes a slit (143), and which the Office Action considers to constitute a diffusion barrier. The first diffusion rate determining section (26) is separated from the second diffusion rate determining section (28) by a first chamber (18).

Regarding the features of claim 11, which have been incorporated into claim 9, is respectfully submitted that Kato et al. does not disclose, or even suggest, that the arrangement at least one of has a smaller pore proportion than the diffusion barrier and is gas-impermeable. **As is apparent from Figures 25A, 25B and 26, the vertically extending slit (144) of first diffusion rate determining section (26) and the slit (143) of second diffusion rate determining section (28) do not contain pores, and the vertically extending slit (144) of first diffusion rate determining section (26) is not gas-impermeable.**

In view of the foregoing, withdrawal of this rejection is respectfully requested.

IV. Conclusion

In light of the foregoing, Applicants respectfully submit that all pending claims are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Dated: October 8, 2009

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